

**\*81541\***

Page 1

**\*N900040100\***

Setup Start \*NS1\*

Stop \*NS2\*

**\*8\***

**Cust Item ID:**

**\*8\***

**Customer:**

**Reference:**

**Tooling:**

**Date:**

Run Start \*NR1\*

**QC:**

**Date:**

**SPC (Y/N):**

**Date:**

Stop **\*NR2\***

2-Deburr per dwg D3499

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 81541**

March-15-12 10:30:58 AM

**\*81541\***

Page 2

Item ID: D3499-3

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Plastic Cable Guard

Start Date: 15/03/2012 Start Qty: 8.00

**\*8\***

Cust Item ID:

Required Date: 29/03/2012 Req'd Qty: 8.00

**\*8\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

QC2- Inspect parts off machine FAI/FAIB

0.00

**\*130\***

QC

Memo

0.00

Quality Control

10 6 126 126

140

CONVENTIONAL MILLING MACHINE

0.00

**\*140\***

Mill Conv

Memo

0.00

Conventional Milling Machine

C'BORE AS PER DWG D3499

2 12.3.28 10 1

150

QC2- Inspect parts off machine FAI/FAIB

0.00

**\*150\***

QC

Memo

0.00

Quality Control

2 12.3.28 10 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 81541

March-15-12 10:30:58 AM

**\*81541\***

Page 3

Item ID: D3499-3 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Plastic Cable Guard  
 Start Date: 15/03/2012 Start Qty: 8.00 **\*8\*** Cust Item ID:  
 Required Date: 29/03/2012 Req'd Qty: 8.00 **\*8\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC8- Inspect parts - second check	0.00							
<b>*160*</b>									
QC	Memo	0.00	B.A	12/03/29		10	0		
Quality Control									
170	Identify as per dwg & Stock Location: <u>ST 207</u>	0.00							
<b>*170*</b>									
Packaging	Memo	0.00							
Packaging									
180	QC21- Final Inspection - Work Order Release	0.00							
<b>*180*</b>									
QC	Memo	0.00							
Quality Control									

(10X) SP 12-03-30.

MLJ 12/04/02

MLJ 12/04/02

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

March-15-12 10:31:03 AM

Page 1

Work Order ID: 81541

**\*81541\***

Parent Item: D3499-3

**\*D3499-3\***

Parent Item Name: Plastic Cable Guard

Start Date: 15/03/2012

Required Date: 29/03/2012

Start Qty: 8.00

Required Qty: 8.00

**Comments:**

IPP Rev:A New Issue 06-05-05 JLM

IPP Rev:B As per Rev B 06-08-31 JLM

revC DD 10.02.23 verified by:EC

IPP Rev:C as per dwg

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MUHMWB625		Purchased	No			110	sf	29.0000	1.081	9.103158		10,	

**\*MUHMWB625\***

UHMW .625 Black Tivar 1000

**\*\***

B12-3-20

Location

Loc Qty

Loc Code

MAT019

29

119591

29

119591

(10)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	81541
<b>Description:</b> Cable Guard		<b>Part Number:</b>	D3499-3
<b>Inspection Dwg:</b> D3499	<b>Rev:</b> B	Page 1 of 1	

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.201 ✓	+0.005/-0.001	-206	2		✓	
Ø0.500 ✓	+0.006/-0.001	-501	2		✓	
3.245 <del>3.255</del>	+/-0.010	3.255	✓		✓	
47.900	+/-0.010	47.900	✓		T	
1.755	+/-0.010	1.758	2		✓	
0.950	+/-0.010	.947	2		✓	
2.605	+/-0.010	2.608	2		✓	
40.700	+/-0.010	40.700	2		+	
12.450	+/-0.010	12.450	2		T	
0.25	+/-0.030	.255	✓		✓	BC 05
0.63	+/-0.030	.630	✓		✓	✓
<del>3.25</del>	<del>+/-0.030</del>				✓	✓
<del>2.00</del>	<del>+0.000/-0.030</del>				✓	✓
2.01	+ .03 - .00	2.035	✓			
.125 X	+/- .010	.125	✓			✓
.63	+/- .030	.624	✓			

<b>Measured by:</b> RB	<b>Audited by:</b> BA	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 12-3-20	<b>Date:</b> 12/03/28	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	06.09.27	New Issue	KJ/JLM	

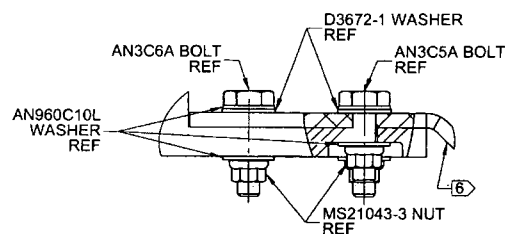
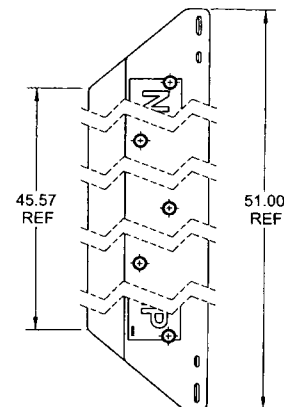
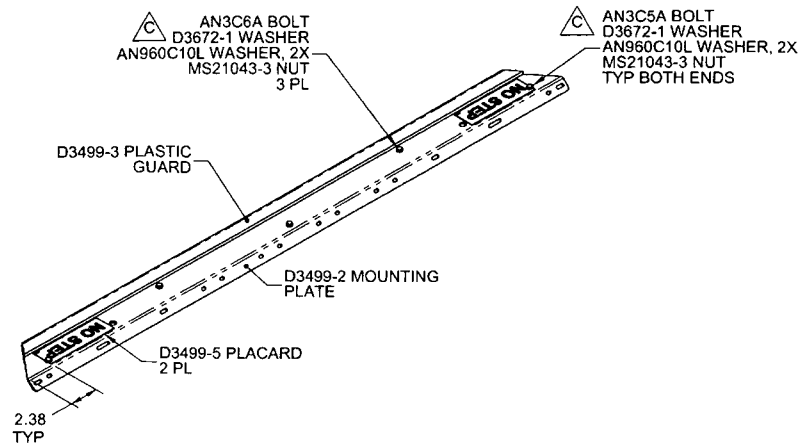
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

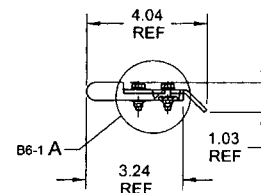
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



**DETAIL A**  
SCALE 4X



**D3499-042 CABLE GUARD ASSEMBLY**

**NOTES:**

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3499-041/-042" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 3.90 lbs

ITEM	QTY	P/N	DESCRIPTION
1	X	D3499-042	CABLE GUARD ASSEMBLY
2	1	D3499-2	MOUNTING PLATE
3	1	D3499-3	PLASTIC GUARD
4	2	D3499-5	PLACARD
5	2	AN3C5A	BOLT
6	3	AN3C6A	BOLT
7	10	AN960C10L	WASHER
8	5	MS21043-3	NUT
9	5	D3672-1	WASHER

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER

NO. 81541415

12/03/15

**RELEASED**  
2010-02-02  
MD

C	DRAWING UPDATED TO CURRENT STANDARDS. 3.245 WAS 3.255 (ZN B6-3); 3.24 WAS 3.25 (ZN D3-3); REVISE TOLERANCE & 2.01 WAS 2.00 (ZN D3-3); D3672-1 WAS NAS1515H3L (ZN D3-1, D5-1, D7-1); ADD IDENTIFY NOTE (ZN A8-1); REF NCR-09-045	RF	09.06.19
B	RE-DESIGN D3499-2F/-3	MB	06.08.15
A	NEW ISSUE	MB	06.04.11
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN	R		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	09.06.19		

**DART AEROSPACE USA, INC.**  
PORT HADLOCK, WA

DRAWING NO. **D3499** REV. C  
SHEET 1 OF 4  
TITLE **CABLE GUARD** SCALE NTS

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

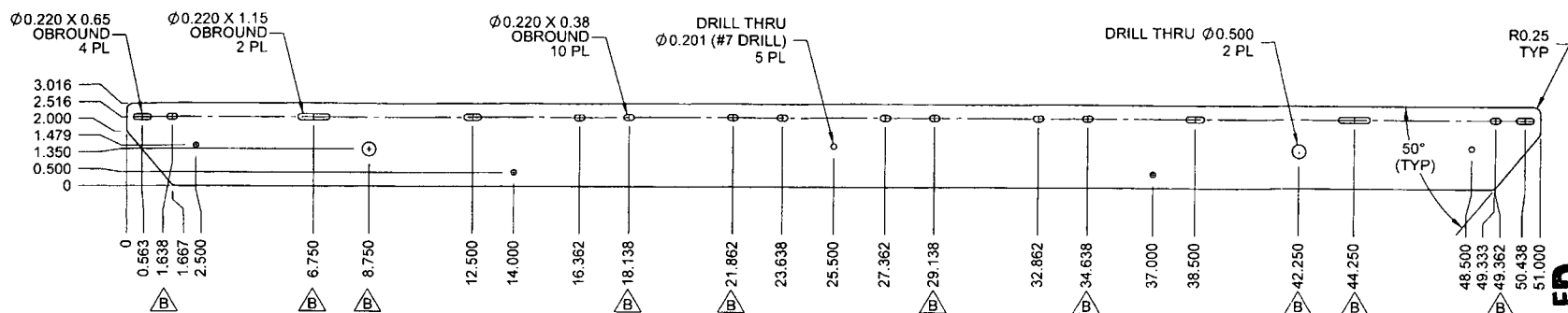
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

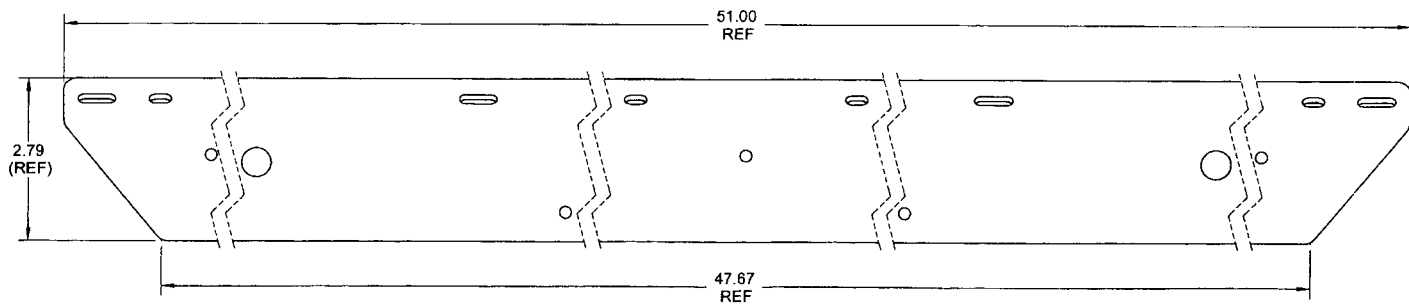
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

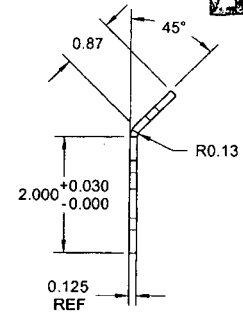
81541



**D3499-2F MOUNTING PLATE FLAT PATTERN**  
SCALE 0.5X



**D3499-2 MOUNTING PLATE**



**D3499-2 BENDING DETAIL**

- NOTES:
- 1) MATERIAL: 6061-T6 ALUMINUM SHEET 0.125 THICK  
PER AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027 OR ASTM B209  
REF. DART SPEC. M6061T6S.125
  - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT "WHITE" (4.3.5.2) PER DART QSI 005 4.3
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: NONE
  - 7) WEIGHT: 1.81 lbs

DESIGN	B	DART AEROSPACE USA, INC.	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D3499	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CABLE GUARD	NTS
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RELEASED  
R 2010-07-07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

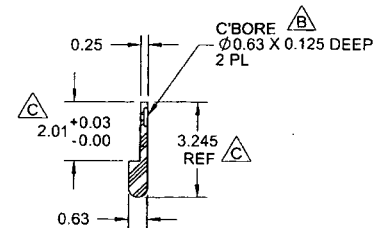
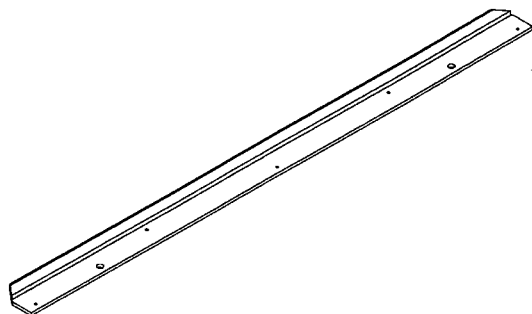
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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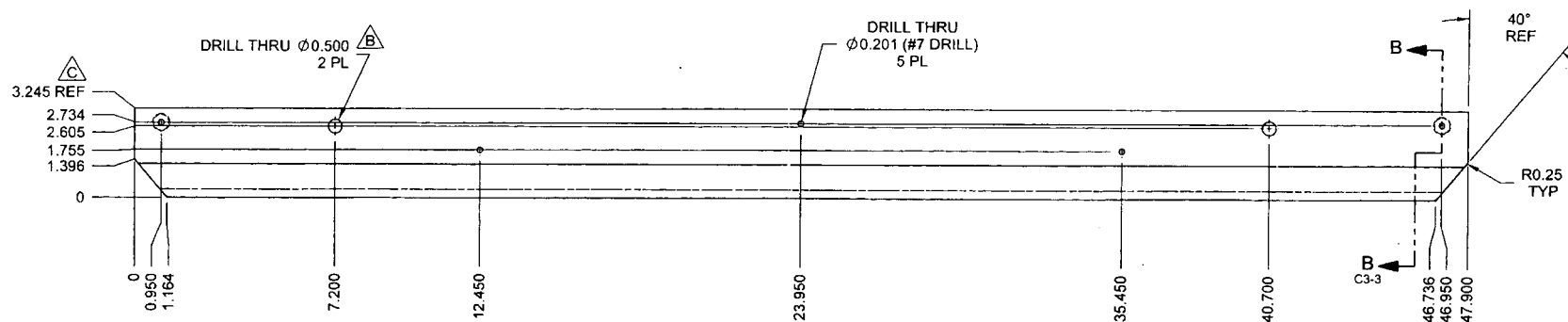
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

81541



**SECTION B-B 82-3**



**D3499-3 CABLE GUARD**

**RELEASED**  
2010-02-02

**NOTES:**

- 1) MATERIAL: UHMW BLACK TIVAR 1000 VIRGIN MATERIAL  
REF. MUHMWB
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 2.52 lbs

DESIGN		DART AEROSPACE USA, INC.	
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

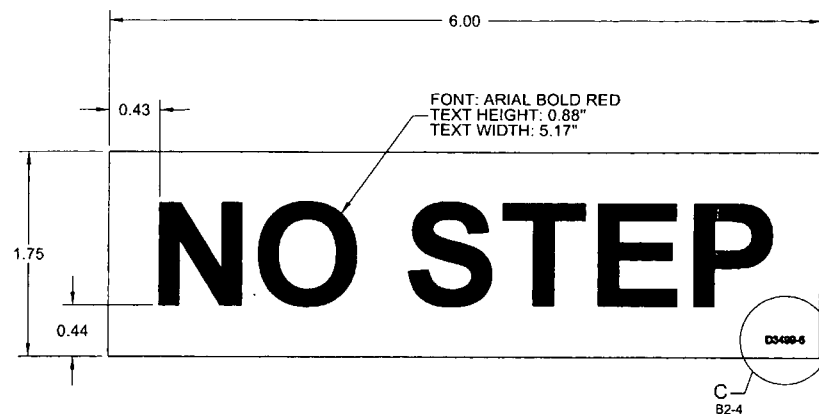
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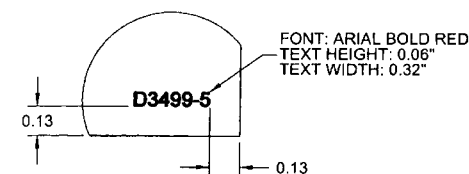
**NOTE:** Date & initial all entries



81541



**D3499-5 PLACARD**



**DETAIL C** B5-4  
SCALE 2X

**NOTES:**

- 1) MATERIAL: RED LETTERS ON WHITE ADHESIVE BACK VINYL  
MANUFACTURED FROM 3M 7 MIL MASKING FILM #8522CP OR  
AVERY IPM #2031. SIZE IS 6.00" LONG" x 1.75" WIDE
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: N/A

**RELEASED**  
2010-02-03  
mtb

DESIGN	B	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED	B	DRAWING NO.	REV. C
MFG. APPR.	[Signature]	D3499	SHEET 4 OF 4
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